REMARKS

Reconsideration of the above identified application is respectfully requested.

Firstly, a Supplemental Information Disclosure Statement was filed by Fax on 15 January 2005, and is not recognized in the present office action, nor does it appear to have yet been entered in the PAIR system.

This apparent defect in the office action was promptly discussed with the examiner on 1/31/05 upon first receiving the office action to ensure Applicant's continued right to amend the claims, if required, upon due consideration by the examiner of the references cited therein.

The examiner instructed this attorney to simply bring this matter to his attention in this response for proper handling and timely consideration by the examiner of that SIDS.

Accordingly, Applicant is filing concurrently herewith a copy of that SIDS along with the statement required under Rule 8(b). Due evaluation of the references listed therein is warranted, and those references should be made of record in the next office action.

The specification has been amended at para. 42 to conform the "unobstructed" slot outlet with paras. 13 and 32-34, for example.

Para. 50 has been amended in response to the drawing objection to eliminate the redundant H spacing and replace it with the B spacing to conform with the claims and specification, at para. 31 for example.

Applicant traverses the objection to the drawings. The spacing feature identified by the examiner is shown in Figure 2 in general, and in Figures 3 & 4 in particular.

It is noted that the claims do not contain the letters (B) and (A) as quoted by the examiner, and the recited spacing between the lip 34 and the coating 42 is clearly

illustrated in Figures 3 & 4.

Nevertheless, Applicant is filing concurrently herewith a drawing amendment in response to the warning of abandonment, and to correct figure 2, as well as to amend figures 3 & 4 in deference to the examiner's interpretation thereof. And, the specification is being correspondingly amended as presented above.

Accordingly, withdrawal of the drawing objection is warranted and is requested.

Applicant notes the substantial breadth of interpretation of Applicant's claims being proffered by the examiner, which correspondingly enlarges claim scope in later infringement analysis of the file wrapper. However, the examiner has failed to afford due weight to specific features and cooperation of features which distinguish over the applied art.

Applicant traverses the rejection of claims 1-4 and 11-13 under Section 102(b) over McCaffrey et al.

The examiner's attempt to copy features from Applicant's claims and merely state that they are disclosed in McCaffrey is without evidence or merit, and fails to meet the specificity requirements of the MPEP.

In *Lindemann Maschinenfabrik GmbH v. American Hoist and Derrick Co.*, 730 F.2d 1452, 221 USPQ 481 (Fed. Cir. 1984), anticipation requirements under 35 U.S.C. §102 are presented as follows:

> Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim. In deciding the issue of anticipation, the trier of fact must identify the elements of the claims, determine their meaning in light of the specification and prosecution history, and identify corresponding elements disclosed in the allegedly anticipating reference. (citations omitted).

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parte Levy, 17 USPQ2d 1461, 1462 (B.P.A.I. 1990) cites *Lindemann* to place the burden of proof upon the examiner as follows:

> Moreover, it is incumbent upon the examiner to identify wherein each and every facet of the claimed invention is disclosed in the applied reference.

Furthermore, the Federal Circuit further held in *Lewmar Marine, Inc. v. Barient, Inc.*, 3 USPQ2d 1766, (1987), *cert. denied*, 108 S.Ct. 702 (1988) that:

> "[t]hat which would *literally* infringe if later in time anticipates if earlier than the date of invention."

Accordingly, anticipation under 35 U.S.C. §102 requires disclosure by a single reference of each and every element recited in a claim functioning in the same manner to produce the same result as the claimed invention.

However, the examiner has failed to identify any relevant disclosure in McCaffrey to support the rejection of any of the claims listed.

On page 4 of the office action the examiner reproduces Figure 3 of McCaffrey in even smaller scale than that found in the patent.

The examiner's contentions on page 4 start with an incomplete sentence, i.e. "increase ...," which suggests comments may have been omitted in drafting the office action.

However, the examiner has also copied col. 3, ll. 19-53 of McCaffrey and merely contends that: "... layer 90,96 can be applied to all the panels 54 with the same thickness T1 and when that is met, the said lip ..." spacing would be met by McCaffrey.

The examiner's contention is without evidentiary support, is overly simplistic in the typical fashion of examination practice, and fails to explain or substantiate

what one skilled in the art would understand from the reference.

The examiner's contention is also surprising and contradictory since the examiner has objected to Applicant's drawing as failing to fully show the important spacing recited in the claims; yet the examiner attempts to apply McCaffrey not for what is shown in the drawings thereof, but for what is not shown in those drawings, and instead the examiner is using bald speculation as to what the drawing might look like based on the written description identified.

This would appear to be a clear inherent admission by the examiner that McCaffrey does not in fact illustrate or teach the important spacing recited in the claims being rejected.

The examiner has copied col. 3, ll. 19-53, with line 32 describing "one embodiment" which appears to be illustrated in Figure 3 of McCaffrey. At line 36 "another embodiment" is described, but not shown. At line 39 a "further embodiment" is described, but not shown. And, at lines 45-53 additional embodiments specific to portion 96 are disclosed, without being shown, and without any nexus with the additional embodiments described at lines 29-44.

The examiner, with the considerable hindsight advantage of having read Applicant's specification and Applicant's claims, then somehow finds in McCaffrey an "embodiment" of the "layer 90,96 [that] can be applied to all the panels 54 with the same thickness T1," yet this premise does not support the examiner's bald conclusion of anticipation of the listed claims, and the examiner has not, and cannot, show otherwise.

For example, the embodiments described at col. 3, ll. 29-44 have a thickness T1 of the thermal barrier material which is only greater that "0.01 inches." That is 0.254 mm, which is quite thin compared with the thick coated TBC and resulting configuration disclosed by Applicant.

The thicker thermal material described at col. 3, ll. 44-53 of up to 0.20 and 0.35 inches is specific to the portion 96 as expressly stated.

And, most significant in McCaffrey is the lack of teaching therein of any associated changes in the liner configuration to accommodate the disclosed thermal barrier embodiments. McCaffrey clearly shows a single embodiment in figure 3, and the other embodiments are clearly not illustrated, so it would be mere speculation how they would be illustrated in an operative combustor.

And, the sole embodiment illustrated in figure 3 of McCaffrey clearly does not meet any of the claims being rejected, and fails to meet the stringent requirements of a Section 102 rejection.

In this regard, Applicant is attaching hereto an enlargement of a representative portion of figure 3 of McCaffrey. Since the examiner is attempting to use this figure to support the rejections, then it would be more meaningful to use an enlargement thereof instead of the reduced version presented at page 4 of the office action.

And, the examiner must then assume that figure 3 of McCaffrey is to scale, but the examiner has not identified any evidentiary support for this, and the patent rules make clear that drawings are not necessarily to scale.

In this regard, MPEP 2125 provides in part:

> PROPORTIONS OF FEATURES IN A DRAWING ARE NOT EVIDENCE OF ACTUAL PROPORTIONS WHEN DRAWINGS ARE NOT TO SCALE
>
> When the reference does not disclose that the drawings are to scale and is silent as to dimensions, arguments based on measurement of the drawing features are of little value. See Hockerson-Halberstadt, Inc. v. Avia Group Int'l, 222 F.3d 951, 956, 55 USPQ2d 1487, 1491 (Fed. Cit 2000) (The disclosure gave no indication that the drawings were drawn to scale. "[i]t is well established that patent drawings do not define the precise proportions of the elements and may not be relied on to show particular sizes if the specification

is completely silent on the issue.").

Since the examiner is attempting to apply McCaffrey for what "can be applied" the examiner has the duty to provide specific evidentiary support therein for his various contentions, especially for those features not illustrated in a drawing; as well as the features shown in figure 3 reproduced by the examiner.

Even assuming arguendo that figure 3 is to scale, that scale does not support the examiner's contentions, but is direct evidence against those contentions.

The enlargement of figure 3 shows two of the steps 56 between two panels 64 and 54. Two layers of the thermal barrier material 90 are shown on the left/first panel 54,64 in the portion 96, and a single layer 90 of the thermal barrier material is shown for the second panel 54.

Independent claims 1 and 11 similarly recite that the lip distal end is spaced from the TBC 42 "less than about said coating nominal thickness."

The enlargement of figure 3 of McCaffrey has been annotated to show that the measured thickness T1 of the right layer 90 is 5 mm, and the adjacent spacing with the edge 76 of the overhang 74 in the cooling slot 78 is 12 mm. Clearly that spacing 12 mm is not less than the thickness 5 mm; which means that there can be no anticipation of Applicant's claims.

And, the left layer 90,96 illustrated in the enlargement has a thickness T1 of 10 mm, with a spacing to the edge 76 measuring 15 mm. Clearly, this 15 mm spacing is not less than the thickness 10 mm; which means that there can be no anticipation of Applicant's claims.

Recognizing this, the examiner must then attempt to use the alternate embodiments of McCaffrey, which embodiments are not illustrated.

The examiner must, therefore, resort to speculation as

to how the thermal barrier might be shown in a combustor liner; but the requirements of Section 102 are stringent: the examiner cannot speculate, nor has the examiner shown that the non-illustrated alternate embodiments would inherently have the features recited in Applicant's claims.

At page 3 of the office action, the examiner baldly attributes to McCaffrey features recited only in Applicant's claims being rejected, without any showing of where those recited features are in fact shown or disclosed in McCaffrey; since they clearly are not.

At page 4 of the office action, the examiner merely opines "that layer 90,96 can be applied ..." yet the examiner has not explained or shown how McCaffrey would necessarily have the specific features recited in the claims being rejected.

Assuming arguendo that the double-layer 90,96 shown on the first panel 64 in McCaffrey would be applied in a similar manner on all the panels 54 as the examiner contends, what would that configuration look like relative to the overhang 74? The examiner has neither explained this, nor has the examiner evaluated McCaffrey for what, indeed, it actually discloses in this very important feature.

See the first panel 64 in the attached enlarged figure 3. Note that this clearly discloses or teaches that when the double layer 90,96 is used on the panel 54,64, then the spacing thereof from the edge 76 of the overhang 74 must still be larger (15 mm being larger than 10 mm) than the thickness of that double layer.

Accordingly, in accordance with the examiner's contention of using the double layer 90,96 over all the panels 54, then the corresponding teaching of McCaffrey would be to maintain that large spacing-to-thickness ratio; which clearly cannot anticipate Applicant's claims.

The examiner's rejections are overly simplistic because they fail to address the extremely esoteric nature of modern

gas turbine engine combustor design, and attempt to use naked features out of context and without regard to their cooperation in the combustion liner.

The teachings of McCaffrey are quite specific and quite limited to the thicker nature of the thermal barrier, but McCaffrey is conspicuously silent on any features of the cooling slots 78 themselves and the cooperation with the thermal barrier because that cooperation is just not required for the specific invention being claimed.

Note further that McCaffrey also discloses a fuel injector 32 inside a swirler, both of which are also esoteric and quite complex and have myriad configurations as evidenced by their associated crowded art. Of what relevance to the thermal barrier are those fuel injectors and swirlers?

The examiner would answer none because those features are not recited in the claims. But, if those features were recited in the claims, then the examiner would then turn to those features and, most likely, similarly argue anticipation based on express or inherent features thereof, and without regard to the dearth of disclosure thereof.

Section 102 mandates stringent requirements of identity of features arranged in the same manner for the same function and purpose to prevent examiners from disregarding those features. Each feature recited in a claim must be found in a single reference in the same combination being recited, and the examiner has clearly failed to support the Section 102 rejections, based fundamentally on his need to speculate, i.e.," when that is met," and secondarily on his failure to present any drawing which shows what would be intended in the non-illustrated embodiments merely discussed in McCaffrey.

The examiner should also be mindful of the warning made to the Applicant in the drawing objection to avoid introducing new matter in Applicant's disclosure. That same warning would correspondingly apply to the examiner's attempted use of McCaffrey; since McCaffrey fails to show

those alternate embodiments, and any attempt by the examiner to contend inherent features thereof would also amount to new matter in McCaffrey.

Figure 3 of McCaffrey is quite clear in illustrating that the edge of the overhang is spaced from the thermal barrier greater than the thickness of that barrier.

Claims 2 & 13 recite that the slot 36 has a height at the slot outlet 38, and the coating is as thick as about half the slot height.

The examiner merely repeats these features at page 3 of the office action, without any identified evidence in McCaffrey; and merely contends that "the range for the thickness T1 can be varied to about this ratio."

However, this is mere examiner speculation, and is clearly not permitted in an anticipation rejection under Section 102.

And, this contention by the examiner is clearly erroneous. The examiner has failed to provide any evidence that the drawings of McCaffrey are to any identified scale. See again, MPEP 2125, supra.

The examiner has failed to provide any drawings in McCaffrey for the mere alternative embodiments being applied by the examiner.

Furthermore, the examiner's fundamental contention is found on page 4 of the office action, which is conspicuously inconsistent and mutually exclusive from the additional contentions presented by the examiner on page 3.

At page 4, the examiner first requires "that layer 90,96 can be applied to all the panels 54 with the same thickness T1...." This, the examiner must contend in his attempt to substantiate the rejection of independent claims 1 and 11; yet without merit as indicated above.

Using this premise of the examiner, the double layer 90,96 illustrated on the first panel 64 in figure 3 of McCaffrey, would then also be applied in an identical manner

on the second and subsequent panels 54. This is mandatory by the examiner's own contention.

However, the double layer 90,96 clearly shown on the first panel 64 in figure 3 has a thickness (T1 according to the examiner) which is more than the thickness of the cooling slot 78. And, applying the same double layer 90,96 to the remaining panels 54 as the examiner contends would also require that the thickness thereof be more than the corresponding thickness of the cooling slots 78 associated therewith.

Section 102 requires stringent analysis and stringent identity of features in a single reference, and the examiner's overly simplistic and speculative comments are clear evidence of the failure of McCaffrey to anticipate any of Applicant's claims.

Claims 3 and 15 recite that the lip 34 has a thickness at the slot outlet 38, and the coating is thicker than the lip thickness.

Yet again, the examiner simply repeats these features on page 3 of the office action, without showing where such features are disclosed in McCaffrey; and without reconciling the inconsistent contentions made by the examiner on page 4.

The examiner has failed to show that the figures of McCaffrey are to any identified scale. The examiner has failed to show how any variation in thickness of the thermal barrier 90 in McCaffrey (including figure 3 for example, and whether that thickness would be less than or greater than that illustrated) would be effected relative to the dimensions of the panels 54 and steps 56 themselves.

Note that McCaffrey at col. 3 discloses the nominal thickness for the thermal layer 90 as being 0.01 inches. Apparently, the double thickness on the first panel 64 in portion 96 would then be 0.02 inches. And, the nominal thickness of the panels 54 themselves are shown to be also about 0.01 inches, which is the thickness of the layer 90.

The thickness of the edge 76 of the overhang 74 would also appear to be about 0.01 inches.

These various dimensions are evident from figure 3 of McCaffrey, and these dimensions are subject to mere speculation since McCaffrey fails to disclose any specific dimensions other than those for the layers 90,96.

Nevertheless, the examiner attempts to use these speculative features of McCaffrey, yet such speculative features do not support the examiner's contentions or rejections.

Accordingly, if the examiner attempts to increase the thickness of the single layer 90 on the second and subsequent panels 54 as stated on page 4 of the office action, how should that be done, and what should that look like, and how should the panels 54 and the steps 56 be modified?

Anticipation under Section 102 does not permit such speculation, and therefore the examiner's rejections are clearly without merit.

Yet, the examiner attempts to apply col. 3 of McCaffrey for "can be varied." But, how?

Col. 3 of McCaffrey also states that the thickness T1 can be "between 0.20 and 0.35 inches." These thicknesses are twenty to thirty-five times the nominal thickness of 0.01 inches disclosed with respect to the illustrated embodiment of figure 3.

Twenty to thirty-five times the thickness is quite remarkable.

What would those embodiments look like?

Since figure 3 of McCaffrey clearly illustrates that the thickness of the panels 54 themselves is about the nominal thickness of 0.01 inches for the single layer 90, would not it follow according to the examiner's contention that "the thickness T1 can be varied" that the resulting 0.20 - 0.35 thickness would be illustrated as twenty to thirty-five times the thickness of the panels 54 illustrated in figure 3?

Clearly such an embodiment being proffered by the examiner is not possible because such a thick thermal layer 90 would extend many times in thickness radially past the overhand 74 and project into the combustor in a fashion clearly untenable to not only one skilled in the art, but to any examiner fairly evaluating such features.

This simple analysis clearly shows that the present examiner does not have license in McCaffrey to merely contend that the "thickness T1 can be varied" in and of itself. Something is clearly missing. And that missing something cannot support any rejection under Section 102, or under Section 103 later addressed.

A more plausible interpretation of the large thicker thermal layer of McCaffrey would be based on scale, and that bigger combustors would have thickness thermal layers 90 in scale to the relative dimensions of their panels 54 and steps 56.

And, smaller combustors would have relatively thin, but thick thermal layers 90 in scale to their relative dimensions.

The examiner's attempt to use solely the thickness of the thermal layer 90 out of context, and without consideration of its use relative to the other dimensions of the panel 54 and step 56 is clearly not supported by McCaffrey itself, or any identified support in the MPEP or case law.

Accordingly, the thickness of the single layer 90 on the panels 54 in figure 3 of McCaffrey are clearly not greater than the thickness of the edge 76 in plain scaling of size, up or down. And, the examiner's attempt to isolate the thickness features of claims 3 and 15 from the dimensions in the parent claims 1 and 11 is conspicuous since there appears to be no disclosure in McCaffrey of such features in the combinations recited in claims 3 and 15, notwithstanding the examiner's isolated contention that the "thickness T1 can be

varied."

Claims 4 and 12 recite that the nugget inlets 30 have a smaller collective flow area relative to the slot outlet 38 at the coating 42.

At page 3 of the office action, the examiner merely repeats these features without identifying any evidence in McCaffrey to support this bald contention.

McCaffrey clearly illustrates in dashed line the openings 80, yet McCaffrey clearly does not disclose anything about the flow area thereof or the relative flow area at the outlet of the slots 78. The examiner's rejection yet again requires mere speculation, which clearly undermines any rejection under Section 102 which does not permit speculation.

Either the applied references discloses the same features in the same combination, or it does not. In this case, McCaffrey clearly does not disclose sufficient evidence to support the examiner's rejection.

Furthermore, the examiner's contentions on pages 3 & 4 require the thicker layer 90,96 in an embodiment clearly not illustrated in McCaffrey. As indicated above, the varied thickness of the layers 90,96 to the disclosed 0.20 - 0.35 inch value, without otherwise scaling or changing thickness of the panels 54 and steps 56 would project that thick layer 90,96 well past the overhang 76 and provide a substantial obstacle or blocking thereof; unless, of course, that thicker layer 90,96 where also moved aft away from the cooling slots 78.

But where is any of this disclosed in McCaffrey? The examiner has the burden of proof in supporting the rejection, and these examples merely emphasize the need by the examiner to employ mere speculation from McCaffrey, since McCaffrey lacks express teachings or figures of the "varied" embodiments which the examiner attempts to use.

The "can be varied" thick thermal layer 90,96 of

McCaffrey as proffered by the examiner would clearly block the cooling slots 78, and most likely create a smaller flow area at the outlet end thereof than at the openings 80 thereof.

Accordingly, withdrawal of the rejection of claims 1-4 and 11-13 under Section 102(b) over McCaffrey et al is warranted and is requested.

Applicant traverses the omnibus rejection of claims 1-6, 8, 9, 11-13, 15, and 16 under Section 103(a) over McCaffrey et al.

The examiner now uses McCaffrey under Section 103 instead of Section 102 "after modification as taught for the alternative embodiment." What modification is that?

The modification presented in the Section 102 rejection?

MPEP 706.02(j) provides the basic requirements which must be provided by the examiner in establishing prima facie obviousness under 35 U.S.C. 103. Four steps are required of the examiner including: (1) relevant teachings as identified by column/page & line number(s); (2) claim differences; (3) proposed modification of the reference(s) to arrive at the claimed subject matter; and (4) an explanation why the proposed modification would have been obvious under Section 103.

The MPEP also requires a showing by the examiner of three basic criteria to establish a prima facie rejection including: first, evidence for the suggestion or modification for modifying or combining references; second, a reasonable expectation of success; and finally, the reference(s) must teach or suggest all the claim limitations, and cannot be based on applicant's own disclosure.

Citing Ex Parte Clapp, the MPEP places the burden of proof on the examiner to provide evidence to support the conclusion of obviousness either from the references which must expressly or impliedly suggest the claimed invention, or the examiner must present a convincing line of reasoning as

to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references.

It is the examiner who must meet this initial burden by applying specific evidence; and clearly the examiner has not met this burden with the mere contention of "after modification ...." and the mere conclusion of "obvious", which fail to meet the stringent "legal motivation" requirements of MPEP ch. 2100.

Unlike the Section 102 rejection previously applied by the examiner, the rejections under Section 103 require a careful evaluation of the claims in the whole, and the applied reference in the whole, and the specific problems confronting the Applicant.

The examiner has failed to identify any relevant problem in McCaffrey for which the solution thereof would be relevant to Applicant's claims.

As indicated above, independent claims 1 and 11 recite that the lip 34 has a distal end at the slot outlet 38 being spaced from the coating 42 aft of the slot less than about the coating nominal thickness.

The examiner merely contends that McCaffrey could be modified so that "... the thickness for the TBC on the second panel is the same as on the first panel," yet this mere contention is not based on any evidence in McCaffrey, nor based on any problem-solving analysis, nor based on legal motivation. It is a bald conclusion plain and simple, without even the attempt to provide any reason for such modification, let alone a suitable reason based on legal motivation.

Nevertheless, by providing the "same thickness" of double layer 90,96 from the first panel 64 on the second panel 54 in McCaffrey would still result in the large (15 mm) spacing between the edge 76 and the thermal barrier whose double thickness (10 mm) is still less than that 15 mm

spacing, see again the attached enlargement.

The examiner's remarks are yet again overly simplistic, and fail to provide any support for how one skilled in the art would evaluate the teachings of McCaffrey, whose teachings on thermal barrier thickness alone are plainly out of context with the relative dimensions of the panels 54 and steps 56.

Note, that neither col. 3 of McCaffrey, or the remainder of the specification provides any teachings specific to the geometry of the basic combustion liners themselves, and the examiner must resort firstly to the figures, i.e., figure 3, of McCaffrey, and then to the general teachings at col. 3 to read therein that which cannot be fairly read therefrom.

McCaffrey clearly does not grant license to the examiner to apply the thicker thermal barrier in a vacuum divorced from the complex and esoteric design of the entire combustor in which it is utilized. A fair reading of McCaffrey would be to apply its teachings in mere scale based on the limited embodiment illustrated.

The 0.20 to 0.35 inch embodiment addressed above is one indication that it would be highly unlikely that one skilled in the art would rotely follow the examiner's mere contention of varying the thickness without regard to the remainder of the liner dimensions, because such a varied embodiment would appear to be twenty to thirty-five times thicker than the nominal thickness of the panels 54 themselves in a grossly distorted, and clearly untenable, embodiment.

No, the McCaffrey teachings should be fairly applied; and the 0.20 to 0.35 inch thickness would more likely be applied by enlarging the entire scale of the combustion liner to one in which the thermal barrier would then be 0.20 to 0.35 inches, which would not change the overall scale of the thermal barrier relative to the other relevant dimensions of the liner.

The common features of claims 2 & 13 and 3 & 15 and 4 &

12 have been addressed above in the Section 102 rejection and are incorporated herein by reference. Those features are clearly not disclosed by McCaffrey, and the examiner's attempt to now use Section 103 in an attempt to overcome the conspicuous silence in McCaffrey with respect thereto is clear evidence of the failure to meet the stringent requirements of Section 103.

Under Section 103, Applicant is entitled to a full and fair evaluation of each and every claim, and the requisite reasons for the rejection thereof as mandated by the MPEP, and the examiner's cursory remarks clearly fail to meet this standard.

Dependent claims 2,3,4 and 12,13,15 have specific features for specific benefit as well explained in the specification, and the examiner has failed to provide any evidence in McCaffrey or any reason in McCaffrey why the illustrated or non-illustrated embodiments thereof would have been modified for any reason by one skilled in the art to support the rejection of these claims under Section 103. Those rejections are therefore without evidence, and without merit.

Dependent claims 5 & 16 recite that the aft panel 28 has a thickness aft of the nugget 30, and the coating is as thick as about the panel thickness; and the slot 36 has an axial length-to-height ratio of about 2.8, and the coating is thicker than the lip 34, and as thick as about half the slot height aft of the slot outlet 38.

The examiner has clearly overlooked these claims in the rush to reject the claims. And, the examiner has been trapped in his own cursory remarks by failing to afford any weight, let alone due weight, to the specific features being recited, and the plain teachings of McCaffrey being applied.

Claims 5 and 16 first recite that the coating is as thick as about the panel thickness.

McCaffrey is clearly silent on the relative thickness of

the thermal barrier 90,96 since that is not germane to the teachings thereof.

However, the examiner has expressly copied figure 3 of McCaffrey into the office action, and that figure 3 clearly shows that the double layer 90,96 for the first panel 64 appears to be twice the thickness of the first panel 64.

And, the thickness of the layer 90 for the second panel 54 appears to match the thickness of that second panel 54.

However, the examiner does not use this embodiment illustrated in figure 3 as is, but "after modification as taught for the alternative embodiments."

What modification?

The examiner further explains at page 4 "where the thickness for the TBC on the second panel is the same as on the first panel." The "same" the examiner emphasizes.

Yet, if this is the examiner's position then that same thickness would match the double thickness of the layer 90,96 from the first panel 64, which is twice the illustrated thickness of that first panel 64, as well as twice the thickness of the second panel 54.

On what evidence or logic, therefore, does the examiner contend that these features of claims 5 and 16 would have been obvious over McCaffrey? The examiner has not explained this.

Furthermore, claims 5 & 16 also recite the specific length-to-height ratio of about 2.8.

The examiner has yet again overlooked this important feature, and has even interpreted this feature incorrectly. Of what relevance to these claims is the "height to length ratio of the slot" in the examiner's contentions at page 6?

The examiner is duty bound to fully and fairly evaluate Applicant's claims one by one, and to fully and fairly present the requisite reasons for rejecting the claims in the office action.

Applicant may then fully and fairly evaluate the

examiner's written position to determine the merits of that position, or the lack thereof.

The length to height ratio at the second panel 54 illustrated in the attached enlargement of figure 3 appears to be 37 mm/15 mm or 2.46; does this meet claims 5 and 16?

Claims 5 and 16 further recite that the coating is thicker than the lip, and about half the slot height aft of the outlet. The examiner has overlooked these features.

Figure 3 of McCaffrey clearly illustrates that the thickness of the thermal barrier 90 on the second panel is thinner than the edge 74, not thicker; and the examiner has not shown that any alternate embodiment would not be similarly scaled in size with the same relative thicknesses.

Furthermore, the double layer 90,96 illustrated in figure 3 for the first panel 64 is clearly thicker than the height of the slot 78, not about half that height. And, the examiner's attempt to thicken the single layer 90 on the second panel with the "same" thickness from the first panel 64 would necessarily result in the thicker layer 90,96 being greater than the slot height, which clearly would not meet the half-thickness feature in claims 5 and 16.

As for the "height to length ratio of the slot" as the examiner incorrectly contends on page 6 of the office action, the examiner's expediency of "conventional range" is not supported by any evidence in McCaffrey or other reference; and the alternate expediency of "workable ranges in the art" is also not supported by McCaffrey or any other reference or the MPEP or case law, or logic.

The "height to length ratio" is irrelevant to the claims, and is taken out of context with the other features of the claims which cooperate therewith. These claims do not mere recite a single feature for which a range thereof might have some merit, but a combination of different features for which the examiner's contention of range has no relevance.

And, assuming arguendo that these claims recited only

the specific length-to-height ratio, the examiner has failed to show how such a ratio is relevant in McCaffrey, or how modification thereof would solve any problem or have any benefit.

Of course, all issued patents in which physical objects are depicted have dimensions; and, of course, those dimensions could be varied in "workable ranges," yet that is not the test under Section 103.

Each claim must be evaluated in the whole for each and every feature recited therein in the recited combination for the benefits presented in the specification. This the examiner has not done, by attempting to extract isolated features of the claims, without regard to context, and even without regard to the actual features being recited. This is plain error, and renders the rejections without merit.

Claim 6, like objected-to claim 17, recites that the nugget inlets extend axially through the bridge 32, and the coating 42 initiates on the aft panel with a ramp. Why the different treatment for these similar features in claims 6 & 17, rejecting claim 6, but merely objecting to claim 17 as containing allowable subject matter?

Nevertheless, the examiner has not provided any comments to support the rejection of claim 6.

The ramp embodiment recited in claim 6 is clearly illustrated in figure 3 of Applicant's drawings.

Compare figure 3 of McCaffrey in which the layers 90,96 are clearly perpendicular to the panels, without any ramps.

Accordingly, the examiner has failed to establish any basis to reject claim 6, and McCaffrey would appear to teach away from this claim by illustrated the perpendicular leading edge of the thermal barriers.

Claim 8 recites that the nugget inlets 40 extend transversely through the aft panel 28 opposite to the lip 34 of the forward panel, and the coating 42 initiates on the aft panel with a blunt step.

In paragraph 6 of the office action, the examiner admits that McCaffrey "does not teach transverse inlet openings," so on what basis is the examiner rejecting claim 8 under McCaffrey?

This rejection therefore lacks the requisite showing under Section 103, and is without merit.

Claim 9 recites that the coating step of claim 8 is spaced aft from the slot outlet, and is spaced from the lip distal end less than about the coating nominal thickness.

The examiner has also overlooked this claim, and has failed to explain any rejection thereof.

The attached enlarged figure 3 of McCaffrey clearly illustrates that the layers 90,96 are spaced from the edges 76 a distance greater than the single or double thicknesses thereof, which clearly teaches away from the claim 9 recitation of coating step being spaced from the lip less than the nominal thickness.

Furthermore, the examiner has identified no relevant teaching in McCaffrey, since there is none. The teachings of McCaffrey are quite limited to the thick thermal barrier, since the rest of the combustion liner would be designed in accordance with conventional practice having no relevance to Applicant's present claims.

The examiner's omnibus rejection of these several claims is conspicuous for the lack of explanation; lack of evidence; failure to afford due weight to express claim features in the specific combinations recited; and lack of legal motivation to modify McCaffrey in any way relevant to Applicant's claims.

And, since all of the claims recite features cooperating with relative dimensions or precise proportions, the examiner's reliance on McCaffrey is dispositive against all the rejections of record for lack of identified scale therein and lack of relevant features.

Accordingly, withdrawal of the rejection of claims 1-6,

8, 9, 11-13, 15, and 16 under Section 103(a) over McCaffrey et al is warranted and is requested.

Applicant traverses the rejection of claims 8 and 20-22 under Section 103(a) over McCaffrey et al and Kenworthy.

Claims 8 & 20 recite that the nugget inlets 40 extend transversely through the aft panel 28 opposite to the lip 34 of the forward panel, and the coating 42 initiates on the aft panel with a blunt step.

The examiner admits that McCaffrey "does not teach transverse inlet openings," and then attempts to blindly apply Kenworthy with the unsupported contention of "equivalent to one with axial inlet openings." with the mere conclusion of obviousness, without any showing of evidence or legal motivation.

The examiner's rush to reject these claims is conspicuous and amounts to mere parts shopping from different references using Applicant's claims as the sole guide as to what to select and what to disregard.

In Kenworthy, no thermal barrier is illustrated or disclosed relative to the invention being illustrated and claimed, since the thermal barrier is not relevant thereto.

At col. 3, ll. 32-49, Kenworthy discloses that the two embodiments shown in figures 1a & 1b are "alternative prior art devices," and this is not the same as "equivalent" as the examiner baldly contends.

At col. 3, ll. 50+, Kenworthy explains the major drawback of these embodiments, and it is quite clear as expressly explained by Kenworthy that the embodiments of figures 1a & 1b are not "equivalents" as the examiner contends, but substantially different from each other, and that they perform differently in the combustor.

The examiner's disregard of the express teachings of Kenworthy is clear evidence of the academic evaluation of these references in the administrative practice before the Patent Office, without due regard to the esoteric nature of

modern combustor design, without regard to Applicant's problems or those presented in McCaffrey and Kenworthy, and without regard to the stringent requirements of the MPEP and the essential showing of legal motivation to modify any reference, conspicuously missing in the examiner's remarks.

Claims 8 & 20 recite the species shown in figure 4 as opposed to the different species shown in figure 3.

These claims recite the blunt step cooperating with the transverse nugget inlets 40.

Claims 6 & 17 recite the figure 3 species in which the nugget inlets extend axially, and the coating initiates in a ramp.

The benefits of these different embodiments are expressly explained in the specification, and these embodiments are clearly not "equivalent," but enjoy different advantage.

McCaffrey clearly illustrates and discloses only the axial openings 80, cooperating with the cooling slots 78 whose aft edges 74 are spaced far from the thermal barrier layers 90,96, and greater than the thicknesses thereof.

Note further, that every step 54 shown in figure 3 of McCaffrey has only the axial openings 80.

Why then would any one or more of the steps 54 in the outer or inner liners of McCaffrey be modified to include the figure 1b embodiment of Kenworthy?

The examiner simply argues "equivalent," but there is no evidence of this, and the basic teachings of both Kenworthy and McCaffrey would teach away from this rote contention.

At best, the examiner is simply contending that it would be obvious to try combining Kenworthy with McCaffrey, but that standard is not permitted by the MPEP or applicable case law.

Note further that the examiner is not using the figure 3 of McCaffrey without modification, but with the modification of at least doubling the thickness of the layer 90 on the

second panel 54 to be the same as that illustrated on the first panel 64.

That doubling of the thickness will provide a substantial flow blockage of the cooling slot 78, and the examiner has not provided any technical reason why the figure 1b of Kenworthy could in fact be substituted for the axial openings 80 of McCaffrey. The transverse openings are clearly not "equivalents," and they would clearly perform differently, and perhaps even compromise cooling performance in McCaffrey.

Note, in this regard Applicant's own specification, and the substantial differences between the figure 3 and figure 4 embodiments.

Will the examiner argue in a subsequent office action in another patent application that those figures 3 and 4 are "equivalent" to each other to support the rejection of some claim in that another application?

The differences in configurations are profound in figures 3 & 4, and would be equally profound in McCaffrey, and the examiner has provided no evidence of any equivalence between figures 1a & 1b of Kenworthy, or any evidence that Kenworthy would have been combined with McCaffrey for any reason by one skilled in the art, as opposed to an examiner fabricating rejections before the Patent Office.

The examiner has also failed to provide any reason to reject claims 21 & 22, which depend from claim 20.

Claim 21 recites that the coating step is spaced aft from the slot outlet, but also recites that that coating is spaced less than its thickness from the lip.

Figure 3 of McCaffrey clearly illustrates that the thermal barrier layers 90,96 are spaced greater than their thickness from the edges 76.

Claim 22 recites that the coating step is spaced less than its thickness from the lip, which is different than McCaffrey in which the layers 90,96 are spaced greater than

their thicknesses.

And, Kenworthy is silent in any teaching relevant to these features of claims 21 & 22, and would therefore teach away.

Accordingly, withdrawal of the rejection of claims 8 and 20-22 under Section 103(a) over McCaffrey et al and Kenworthy is warranted and is requested.

Applicant notes the allowability of claims 7, 10, 14, and 17-19, but the rewriting thereof is not warranted in view of the substantial differences of their parent claims over the applied references.

As an accommodation to the examiner, and his broad interpretation of the claims and references applied, Applicant has chosen, nevertheless, to amend certain claims to better distinguish over the applied references.

Since claims 6-8 & 17-20 recite species of the leading edge ramp for the benefits disclosed in the specification, independent claims 1 & 11 have been similarly amended to introduce the inclined leading edge of the coating 42 behind the nugget outlet 38.

The leading edges of the thermal barrier layers 90 in McCaffrey are clearly normal or perpendicular to the panels 54; and therefore lack the advantages of Applicant's configurations.

Claims 5 & 16 have been similarly amended to remove the extraneous word "thereon."

Claim 6 has been amended to conform with the introduction of the coating leading edge in the independent claims, and recite the shallow species of the ramp as disclosed at paras. 44 & 45. This is in stark contrast with the normal leading edges in McCaffrey.

Claim 7 has been amended to conform with claim 6, and delete the extraneous comparison as disclosed at para. 46.

Claim 8 has been amended to conform with the introduction of the coating leading edge in the independent

claims, and to additionally recite the blunt species of the leading edge being less than 90 degrees and down to 85 degrees as disclosed at paras. 47 & 48. This species is clearly different than the normal, or 90 degree, leading edge of the thermal layers 90 in McCaffrey.

Claim 13 has been amended to recite the species of the coating thickness being less than the slot height as disclosed at paras. 37 & 38. Note, that figure 3 of McCaffrey clearly shows the thickness of the layers 90,96 being greater than the slot thickness.

Claim 17 has been amended to conform with the previous introduction of the leading edge.

Claim 19 has been amended to conform with claim 17, and delete the extraneous comparison as disclosed at para. 46.

Claim 20 has been amended to conform with claim 17.

These additional features of the claims effect configurations in which the thermal barrier coating may be applied relatively thick as disclosed in the specification, without obstructing efficient operation of the cooling nugget or compromising cooling performance in this region in which TBC cannot be introduced.

This is a highly esoteric cooperation of features, and is disclosed in the specification, and lacks any corresponding features or teachings in McCaffrey, which instead discloses a different invention, without regard to the relative dimensions between the thermal layers 90 and the steps 54.

It is again noted that the examiner has only objected to claim 17 which introduces the leading edge ramp. The corresponding inclined leading edge added to the claims continues to cover both disclosed species of shallow to blunt ramps with the also recited relative cooperation thereof to more fully distinguish over the applied references.

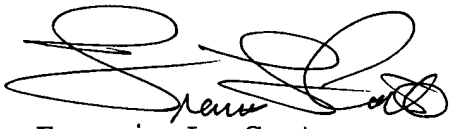
In accordance with the duty imposed by 37 CFR 1.104 and MPEP sections 707, 707.05, 707.07, and 707.07(g), the

examiner is requested to reconsider all the art of record, including the additional references not applied, to ensure full compliance with the required thoroughness of examination.

In re Portola Packaging, Inc., 42 USPQ2d 1295 (Fed. Cir. 1997) emphasizes the importance of complying with this duty to ensure that all references of record have been fully considered by the examiner in the various combinations thereof. And, the Board of Appeals has further elaborated on the importance of this examiner duty in Ex parte Schricker, 56 USPQ2d 1723 (B.P.A.I. 2000).

In view of the above remarks, allowance of all claims 1-22 over the art of record is warranted and is requested.

Respectfully submitted,



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Attachment: Fig. 3 Enlargement- USP 6438958

Concurrent filing:

(1) Drawing Amendment
(2) SIDS dated 15 Jan 2005 - Duplicate

US Patent 6 438 958
Fig. 3 Enlarged